

# ELL880: Assignment 1

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Weightage: **7%** of the course grade.

This assignment is adapted from Chapter 6 of Richard McElreath's *Statistical Rethinking* book, 2nd edition. Please use the `rethinking` package in R to obtain the required data. You should submit both your code (properly commented and organised for easy readability) as well as a report containing a description of all your models and results, along with any plots or diagrams as needed. Submission will be via Moodle. The deadline for this assignment is **31st March, 11.59pm**.

- Use the Waffle House data, `data(WaffleDivorce)`, to find the total causal influence of number of Waffle Houses on divorce rate. Justify your model or models with a causal graph. [3]
- Build a series of models to test the implied conditional independencies of the causal graph you used in the previous problem. If any of the tests fail, how do you think the graph needs to be amended? Does the graph need more or fewer arrows? Feel free to nominate variables that aren't in the data. [4]